Figure 1: WWP1 open reading frame and translation to corresponding polypeptide

	AAAAI	1 0	/CII	Cuc	my	-11 α.				<u> </u>							
5	1 1	ATG M	GCC A	ACT T	GCT A	TCA S	CCA P	AGG R	TCT S	GAT D	ACT T	AGT S	AAT N	AAC N	CAC H	AGT S	45 15
	46 16	GGA G	AGG R	TTG L	CAG Q	TTA L	CAG Q	GTA V	ACT T	GTT V	TCT S	AGT S	GCC Ā	AAA K	CTT	AAA K	90 30
10	91 31	AGA R	AAA K	AAG K	AAC N	TGG W	TTC F	GGA G	ACA T	GCA A	ATA I	TAT Y	ACA T	GAA E	GTA V	GTT V	135 45
15	136 46	GTA V	GAT D	GGA G	GAA E	ATT I	ACG T	AAA K	ACA T	GCA A	AAA K	TCC S	AGT S	AGT S	TCT S	TCT S	180 60
	181 61	AAT N	CCA P	AAA K	TGG W	GAT D	GAA E	CAG Q	CTA L	ACT T	GTA V	AAT N	GTT V	ACG T	CCA P	CAG Q	225 75
20	226 76	ACT T	ACA T	TTG L	GAA E	TTT F	CAA Q	GTT V	TGG W	AGC S	CAT H	CGC R	ACT T	TTA L	AAA K	GCA A	270 90
	271 91	GAT D	GCT A	TTA L	TTA L	GGA G	AAA K	GCA A	ACG T	ATA I	GAT D	TTG L	AAA K	CAA Q	GCT A	CTG L	315 105
25	316 106	TTG L	ATA I	CAC H	AAT N	AGA R	AAA K	TTG L	GAA E	AGA R	GTG V	AAA K	GAA E	CAA Q	TTA L	AAA K	360 120
30	361 121	CTT L	TCC S	TTG L	GAA E	AAC N	AAG K	AAT N	GGC G	ATA I	GCA A	CAA Q	ACT T	GGT G	GAA E	TTG L	405 135
	406 136	ACA T	GTT V	GTG V	CTT L	GAT D	GGA G	TTG L	GTG V	ATT I	GAG E	CAA Q	GAA E	AAT N	ATA I	ACA T	450 150
35	451 151	AAC N	TGC C	AGC S	TCA S	TCT S	CCA P	ACC T	ATA I	GAA E	ATA I	CAG Q	GAA E	AAT N	GGT G	GAT D	495 165
	496 166	GCC A	TTA L	CAT H	GAA E	AAT N	GGA G	GAG E	CCT P	TCA S	GCA A	AGG R	ACA T	ACT T	GCC A	AGG R	540 180
40	541 181	TTG L	GCT A	GTT V	GAA E	GGC G	ACG T	AAT N	GGA G	ATA I	GAT D	AAT N	CAT H	GTA V	CCT P	ACA T	585 195
45	586 196	AGC S	ACT T	CTA L	GTC V	CAA Q	AAC N	TCA S	TGC C	TGC C	TCG S	TAT Y	GTA V	GTT V	AAT N	GGA G	630 210
	631 211	D	N	T	P	S	S	P	S	Q	V	Α	Α	R	CCC P	K	675 225
50	676 226	N	T	P	Α	· P	K	P	L	A	S	E	P	Α	GAT D	D	720 240
	721 241	T	V	N	G	E	S	S	S	F	A	P	Т	D	AAT N	А	765 255
55	766 256	S	V	T	G	Т	P	V	V	S	E	Е	N	Α	TTG L	S	810 270
60	811 271	P	N	С	T	S	Т	Т	V	Е	D	P	P	V	CAA Q	Е	855 285
	856 286	I	L	T	S	s	E	N	N	E	С	Ι	P	S	ACC T	S	900 300
	901	GCA	GAA	TTG	GAA	TCT	GAA	GCT	AGA	AGT	ATA	TTA	GAG	CCT	GAC	ACC	945

Applicants: Paz Einat et al. U.S. Serial No.: Not Yet Known Filing Date: July 11, 2003 Tide: WWPI AND USES THEREOF 1 of 8

315 301 Ε L Ε S E Α R S 1 L Е D GCT TTT GAA GCA GCC AAA TCA AGA 990 946 TCT AGA AGT AGT TCT 316 E 330 CAG CCA GAT GGG TGT ATG GAT CCT GTA CGG CAG CAG TCT GGG AAT 1035 991 С D ₽ 0 G 345 331 М GCC AAC ACA GAA ACC TTG CCA TCA GGG TGG GAA CAA AGA AAA GAT 1080 1036 10 E 360 346 G CCT CAT GGT AGA ACC TAT TAT GTG GAT CAT AAT ACT CGA ACT ACC 1125 1081 375 361 1126 ACA TGG GAG AGA CCA CAA CCT TTA CCT CCA GGT TGG GAA AGA AGA 1170 376 P Q 390 Е L 1171 GTT GAT GAT CGT AGA AGA GTT TAT TAT GTG GAT CAT AAC ACC AGA 1215 391 R R R Y Y 405 20 ACA ACA ACG TGG CAG CGG CCT ACC ATG GAA TCT GTC CGA AAT TTT 1260 1216 Р 420 406 Q R Т М Е 1261 GAA CAG TGG CAA TCT CAG CGG AAC CAA TTG CAG GGA GCT ATG CAA 1305 435 421 R N 0 CAG TTT AAC CAA CGA TAC CTC TAT TCG GCT TCA ATG TTA GCT GCA 1350 450 436 0 R Y L Y S Α S M Α GAA AAT GAC CCT TAT GGA CCT TTG CCA CCA GGC TGG GAA AAA AGA 1395 1351 465 4.51 Р Y G Ρ L Р Р G  $\mathbf{E}$ K 1396 GTG GAT TCA ACA GAC AGG GTT TAC TTT GTG AAT CAT AAC ACA AAA 1440 466 D S т D R v Υ F v N Н N т 480 1441 ACA ACC CAG TGG GAA GAT CCA AGA ACT CAA GGC TTA CAG AAT GAA 1485 481 0 Е D Р R T 0 G L 0 N 495 GAA CCC CTG CCA GAA GGC TGG GAA ATT AGA TAT ACT CGT GAA GGT 1530 1486 40 496 Ρ L Ρ F. G W Ε Ι R Y Т R E 510 GTA AGG TAC TTT GTT GAT CAT AAC ACA AGA ACA ACA TTC AAA 1531 1575 511 Y V D Н N Т R Т T 525 F GAT CCT CGC AAT GGG AAG TCA TCT GTA ACT AAA GGT GGT CCA CAA 1576 1620 N G K S s V T G 540 ATT GCT TAT GAA CGC GGC TTT AGG TGG AAG CTT GCT CAC TTC CGT 1621 1665 G F R W 555 R K F 50 TAT TTG TGC CAG TCT AAT GCA CTA CCT AGT CAT GTA AAG ATC AAT 1710 1666 s N s V 570 С 0 Α L Ρ Н Ι 1755 1711 GTG TCC CGG CAG ACA TTG TTT GAA GAT TCC TTC CAA CAG ATT ATG Т L F Е D S F 585 1756 GCA TTA AAA CCC TAT GAC TTG AGG AGG CGC TTA TAT GTA ATA TTT 1800 D 600 Y R R R 1801 AGA GGA GAA GGA CTT GAT TAT GGT GGC CTA GCG AGA GAA TGG 1845 615 1846 TTT TTC TTG CTT TCA CAT GAA GTT TTG AAC CCA ATG TAT TGC TTA 1890 Н E V L S N P M 630 65

> Applicants: Paz Einat et al. U.S. Serial No.: Not Yet Known Filing Date: July 11, 2003 Title: WWP1 AND USES THEREOF 2 of 8

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         TGA
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Applicants: Paz Einat et al. U.S. Serial No.: Not Yet Known Filing Date: July 11, 2003 Title: WWP1 AND USES THEREOF 3 of 8

## Figure 2: WWP1 antisense fragment

> Applicants: Paz Einat et al. U.S. Serial No.: Not Yet Known Filing Date: July 11, 2003 Title: WWP1 AND USES THEREOF 4 of 8

Figure 3: Alignment between the WWP1 open reading frame and the WWP1 antisense fragment of Figure 2

5	WWP1 WWP1		1 1	ATGGCCACTGCTTCACCAAGGTCTGATACTAGTAATAACCACAGTGGAAGGTTGCAGTTA
10	WWP1 WWP1		61 1	CAGGTAACTGTTTCTAGTGCCAAACTTAAAAGAAAAAAGAACTGGTTCGGAACAGCAATA
	WWP1 WWP1		121 1	TATACAGAAGTAGTTGTAGATGGAGAAATTACGAAAACAGCAAAATCCAGTAGTTCTTCT
15	WWP1 WWP1		181 1	AATCCAAAATGGGATGAACAGCTAACTGTAAATGTTACGCCACAGACTACATTGGAATTT
	WWP1 WWP1		241 1	CAAGTTTGGAGCCATCGCACTTTAAAAGCAGATGCTTTATTAGGAAAAGCAACGATAGAT
20	WWP1 WWP1		301 1	TTGAAACAAGCTCTGTTGATACACAATAGAAAATTGGAAAGAGTGAAAGAACAATTAAAA
25	WWP1 WWP1		361 1	CTTTCCTTGGAAAACAAGAATGGCATAGCACAAACTGGTGAATTGACAGTTGTGCTTGAT
	WWP1 WWP1		421 1	GGATTGGTGATTGAGCAAGAAATATAACAAACTGCAGCTCATCTCCAACCATAGAAATA
30	WWP1 WWP1		481 1	CAGGAAAATGGTGATGCCTTACATGAAAATGGAGAGCCTTCAGCAAGGACAACTGCCAGG
	WWP1 WWP1		541 1	TTGGCTGTTGAAGGCACGAATGGAATAGATAATCATGTACCTACAAGCACTCTAGTCCAA
35	WWP1 WWP1		601 1	AACTCATGCTGCTCGTATGTAGTTAATGGAGACAACACACCTTCATCTCCGTCTCAGGTT
40	WWP1 WWP1		661 1	GCTGCCAGACCCAAAAATACACCAGCTCCAAAACCACTCGCATCTGAGCCTGCCGATGAC
	WWP1 WWP1		721 1	ACTGTTAATGGAGAATCATCCTCATTTGCACCAACTGATAATGCGTCTGTCACGGGTACT
45	WWP1 WWP1		781 1	CCAGTAGTGTCTGAAGAAAATGCCTTGTCTCCAAATTGCACTAGTACTACTGTTGAAGAT
	WWP1 WWP1		841 1	CCTCCAGTTCAAGAAATACTGACTTCCTCAGAAAACAATGAATG
50	WWP1 WWP1		901 1	GCAGAATTGGAATCTGAAGCTAGAAGTATATTAGAGCCTGACACCTCTAATTCTAGAAGT
55	WWP1 WWP1	ORF AS	961 1	AGTTCTGCTTTTGAAGCAGCCAAATCAAGACAGCCAGATGGGTGTATGGATCC <mark>TGT</mark> A <mark>CGG</mark> 
	WWP1 WWP1	ORF AS	1021 8	CAGCAGTCTGGGAATGCCAACACAGAA <mark>CC</mark> TTGCCATCA <mark>GGGTGGGAACAAAGAAAAGA</mark> CAGCAGTCTGGGAATGCCAACACAGAA <mark>N</mark> CNTTGCCATCA <mark>G</mark> GGGTGGGAACAAAGAAAAAGA
60	WWP1 WWP1	ORF	1080 68	TCCTCATGGTAGA <mark>ACC</mark> TATTATGTGG <mark>A</mark> TCATAAT <mark>A</mark> CTCGAACTACCACATGGGAGAGACC TCCTCATGGTAGA <mark>G</mark> CGTATTATGTGG <mark>N</mark> TCATAAT <mark>G</mark> CTCGAACTACCACATGGGAGAGACC
	WWP1	ORF AS	1140 128	ACAACCTTTACCTCCAGGTTGGGAAAGAAGAGTTGATGATCGTAGAA <mark>G</mark> GAGTTTATTATGT ACAACCTTTACCTCCAGGTTGGGAAAGAAGAGTTGATGATCGTAGA <mark>G</mark> GAGTTTATTATGT

Applicants: Paz Einat et al. U.S. Serial No.: Not Yet Known Filing Date: July 11, 2003 Title: WWP1 AND USES THEREOF 5 of 8

		•		
	WWP1 WWP1		1200 188	GGATCATAACACCAGAACAACAACGTGGCAGCGGCCTACCATGGAATCTGTCCG <mark>A</mark> AATTT GGATCATAACACCAGAACAACAACGTGGCAGCGGCCTACCATGGAATCTGTCCG <mark>N</mark> AATTT
5	WWP1 WWP1		1260 248	TGA <mark>A</mark> CAGTGGCAATCTCAGCGGAACCAATTGCAGGGAGCTATGCAACAGTTTAACCAACG TGA <mark>N</mark> CAGTGGCAATCTCAGCGGAACCAATTGCAGGGAGCTATGCAACAGTTTAACCAACG
10	WWP1		1320 308	ATACCTCTATTCGGCTTCAATGTTAGCTGCAGAAAATGACCCTTATGGACCTTTGCCACC ATACCTCTATTCGGCTTCAATGTTAGCTGCAGAAAATGACCCTTATGGACCTTTGCCACC
	WWP1 WWP1		1380 368	AGGCTGGGAAAAAAGAGTGGATTCAACAGACAGGGTTTACTTTGTGAATCATAACACAAA AGGCTGGGAAAAAAGAGTGGATTCAACAGACAGGGTTTACTTTGTGAATCATAACACAAA
15	WWP1 WWP1		1440 428	AACAACCCAGTGGGAAGATCCAAGAACTCAAGGCTTACAGAATGAAGAACCCCTGCCAGA AACAACCCAGTGGGAAGATCCAAGAACTCAAGGCTTACAGAATGAAGAACCCCTGCCAGA
	WWP1 WWP1		1500 488	AGGCTGGGAAATTAGATATACTCGTGAAGGTGTAAGGTACTTTGTTGATCATAACACAAG AGGCTGGGAAATTAGATATACTCGTGAAGGTGTAAGGTACTTTGTTGATCATAACACAAG
20	WWP1		1560 548	AACAACAACATTCAAAGATCCTCGCAATGGGAAGTCATCTG <mark>TA</mark> ACTAAAGG <mark>T</mark> GGTCCACA AACAACAACATTCAAAGATCCTCGCAATGGGAAGTCATCTG-NACTAAAGG-GGTCCACA
	WWP1		1620 606	AATTGCTTATGAACGCGGCTTTAGGTGGAAGCTTGCTCACTTCCGTTATTTGTGCCAGTC AA-TGCTTA-NAACGCGGCGG
25	WWP1		1680 624	TAATGCACTACCTAGTCATGTAAAGATCAATGTGTCCCGGCAGACATTGTTTGAAGATTC
30	WWP1 WWP1		1740 624	CTTCCAACAGATTATGGCATTAAAACCCTATGACTTGAGGAGGCGCTTATATGTAATATT
	WWP1 WWP1		1800 624	TAGAGGAGAAGAAGGACTTGATTATGGTGGCCTAGCGAGAGAATGGTTTTTCTTGCTTTC
35	WWP1		1860 624	ACATGAAGTTTTGAACCCAATGTATTGCTTATTTGAGTATGCGGGCAAGAACAACTATTG
40	WWP1		1920 624	TCTGCAGATAAATCCAGCATCAACCATTAATCCAGACCATCTTTCATACTTCTGTTTCAT
	WWP1		1980 624	TGGTCGTTTTATTGCCATGGCACTATTTCATGGAAAGTTTATCGATACTGGTTTCTCTTT
45	WWP1		2040 624	ACCATTCTACAAGCGTATGTTAAGTAAAAAACTTACTATTAAGGATTTGGAATCTATTGA
	WWP1 WWP1		2100 624	TACTGAATTTTATAACTCCCTTATCTGGATAAGAGATAACAACATTGAAGAATGTGGCTT
50	WWP1		2160 624	AGAAATGTACTTTTCTGTTGACATGGAGATTTTGGGAAAAGTTACTTCACATGACCTGAA
55		ORF AS	2220 624	GTTGGGAGGTTCCAATATTCTGGTGACTGAGGAGAACAAAGATGAATATATTGGTTTAAT
	WWP1	ORF AS	2280 624	GACAGAATGGCGTTTTTCTCGAGGAGTACAAGAACAGACCAAAGCTTTCCTTGATGGTTT
60	WWP1	ORF AS	2340 624	TAATGAAGTTGTTCCTCTTCAGTGGCTACAGTACTTCGATGAAAAAGAATTAGAGGTTAT
	WWP1	ORF	2400 624	GTTGTGTGGCATGCAGGAGGTTGACTTGGCAGATTGGCAGAGAAATACTGTTTATCGACA
65	WWP1	ORF	2460	${\tt TTATACAAGAAACAGCAAATCATTTGGTTTTTGGCAGTTTGTGAAAGAGACAGAC$

Applicants: Paz Einat et al. U.S. Serial No.: Not Yet Known Filing Date: July 11, 2003 Title: WWPI AND USES THEREOF 6 of 8

## 7/8

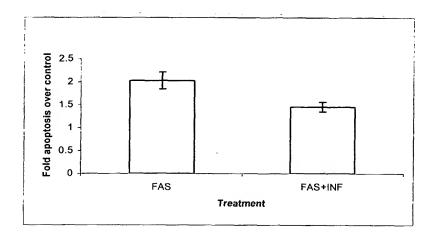
	WWP1	AS	624	
5	WWP1 WWP1		2520 624	TGAAGTAAGAATGCGACTATTGCAGTTCGTCACTGGAACCTGCCGTTTACCTCTAGGAGG
	WWP1 WWP1		2580 624	ATTTGCTGAGCTCATGGGAAGTAATGGGCCTCAAAAGTTTTGCATTGAAAAAGTTGGCAA
10	WWP1 WWP1		2640 624	AGACACTTGGTTACCAAGAAGCCATACATGTTTTAATCGCTTGGATCTACCACCATATAA
	WWP1 WWP1		2700 624	GAGTTATGAACAACTAAAGGAAAAACTTCTTTTTGCAATAGAAGAGACAGAGGGATTTGG
15	WWP1	ORF	2760	ACAAGAAGATTACAAGGACGACGATAAGTGA
	WWP1	AS	624	

Applicants: Paz Einat et al. U.S. Serial No.: Not Yet Known Filing Date: July 11, 2003 Title: WWP1 AND USES THEREOF 7 of 8

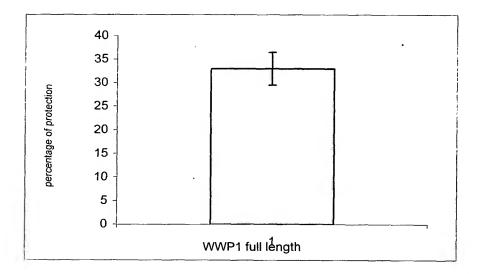
Figure 4: validation of the anti-apoptotic effect of WWP1

a)

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b)



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Applicants: Paz Einat et al. U.S. Serial No.: Not Yet Known Filing Date: July 11, 2003
Title: WWP1 AND USES THEREOF

8 of 8